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FLORA AND FAUNA OF THE REPUBLIC OF KARAKALPAKSTAN

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ANNOTATION
The article discusses the features of the flora and fauna of the Republic of Karakalpakstan. The territory of Karakalpakstan can be divided into 4 botanical-geographical regions: Ustyurt, Kyzylkum, the lower reaches of the Amu Darya and the dried-up part of the Aral Sea, which currently grow about 1000 species of higher plants and are home to 498 species of vertebrate animals, 1392 species of insects.
KEY WORDS: *Kyzylkum, Lower Amu Darya, Ustyurt, IUCN, Red Book, region, protection.*

The Republic of Karakalpakstan, located in the desert zone of the Central Asian region, is defined by a sharply continental desert climate with extremely low precipitation and high evaporation. Most of the territory is occupied by the deserts of the Ustyurt and Kyzylkum plateaus. Between them are the drying Aral Sea and the delta of the Amu Darya River, which, in turn, are separated by another desert (new) Aralkum.

The territory of Karakalpakstan can be divided into 4 botanical-geographical regions: Ustyurt, Kyzylkum, the lower reaches of the Amu Darya and the dry part of the Aral Sea, where about 1000 species of higher plants currently grow. Many of these plants have beneficial properties, for example, they have been widely used in medicine from ancient times to the present day.

The vegetation cover of deserts changes sharply depending on the substrate: psammophytic vegetation dominates on sands, gypsophytic vegetation dominates on rocky substrates, halophytic vegetation dominates on salt marshes, and wormwood, wormwood-salt and ephemeral vegetation dominates on loamy soils.

Forage plants are widespread in Ustyurt, which allows livestock to graze here all year round. Among them are biyurgunniks, wormwoods, saxauls, kereushniks, ephemerals and ephemeroids.

In the sands of the Kyzylkum desert, grow white saxaul, dzhuzgunniki, wormwood, chokeberry, biyurgunnik, cereals, silts, ephemerals and ephemeroids: ephedra, wormwood, selin, etc. Many of these plants are feed for cattle, and are also used in medicine (ferula, ephedra, wormwood).

The lower reaches of the Amu Darya are a monotonous plain with a slight slope towards the Aral Sea. It is characterized by a large concentration of tugai forest stands growing in the area of the modern and ancient Amu Darya delta, and is considered the main area of distribution of tugai trees in Central Asia. Other vegetation of the Lower Amu Darya is represented by reed, fodder, medicinal, dyeing and essential oil plants.

The vegetation of the dry bottom of the Aral Sea or the desert, which Aral-Kum has recently begun to reclaim again, is sparse. It is mainly represented by halophytes: species of comb grass, juzgun, saltwort, seline, etc. One of the most important tree-like plants are species of saxaul - black and white.

In the animal world of deserts, their adaptation to rather unfavorable environmental conditions is revealed. Animals in the desert also adapt to excessive heat and lack of moisture in different ways.

Some of them switch to a nocturnal lifestyle, and from the heat of the day they hide in holes or bury themselves in the sand or sit out on the branches of bushes. The lack of water in the desert has led to the fact that some desert animals do not drink water at all

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and do not even know how to drink (yellow gopher). They get the necessary moisture from plants, while predators get it from the blood of their victims. Animals of ephemeral deserts, leading an active lifestyle in the spring, go into hibernation in the hot summer.

On the territory of the Republic of Karakalpakstan, 498 species of vertebrate animals have been registered, including mammals - 68, birds - 307 (of which nesting - 141, wintering - 20, migrating - 146), reptiles - 33, amphibians - 2, fish - 49 species. There are approximately 7 times more invertebrate animals, but they are very poorly studied. The greatest diversity is found in insects - 1392 species belonging to 23 orders.

The most fully studied invertebrates are parasites of fish, birds, crustaceans and mollusks. Thus, 436 species of parasites are known in fish, and 133 species of helminths are known in birds. 45 species of fleas and 16 species of ticks were found on rodents.

420 species of invertebrates have been registered in the tugai biocenosis, 264 in the gypsum desert, and 180 in the sandy desert.

The species composition of vertebrates in Karakalpakstan has undergone noticeable changes over the past decades. A significant portion of terrestrial species have greatly decreased in number and are classified as vulnerable, rare or endangered.

The Red Book of Uzbekistan (2006) lists 10 species of mammals, 37 birds, 12 fish, 4 reptiles. The International Union for Conservation of Nature (IUCN) Red List of mammals of Karakalpakstan includes 2 extinct species (Asian cheetah and Turanian tiger) and 4 critically endangered species (Indian honey badger, Turkmen caracal, Turkmen kulan, Ustyurt sheep) ; of birds - 5 endangered and on the verge of extinction species (marbled teal, white-headed duck, Siberian crane, bustard, slender-billed curlew), of fish - 5 species (Aral thorn, large and small Amu Darya silverback, Aral spined loach and Aral brown trout). Of the former objects of hunting and fishing - 24 species of mammals, 60 species of birds and 14 species of fish of Karakalpakstan, many have disappeared or decreased in number and have lost their commercial significance.

At the same time, as a result of acclimatization measures and through self-dispersal, 14 species of fish appeared in the water bodies of Karakalpakstan. However, only 4 of them are of commercial importance and even occupy leading positions in the fishery.

In 1976, 12 deer were brought to the Badatugai Nature Reserve, which is located on the territory of the Republic of Karakalpakstan, and were housed in specially built mesh enclosures. The Bukhara deer, as an animal of great importance for global biodiversity, which is in a catastrophic state and under a real threat of extinction, is included in the lists of priority taxa of ungulates of the International Union for Conservation of Nature, listed in the IUCN Red Book (2006), as well as in the Red Book lists Republic of Uzbekistan (2006). Currently, on the territory of the Amudarya State Biosphere Reserve (formerly Badatugai Reserve), the number of Bukhara deer has reached more than 1,200 individuals.

The fauna of Karakalpakstan has its own characteristics. Thus, desert inhabitants are considered the best runners. For example, hedgehogs, which are relatively slow-moving animals, are represented here by long-eared and long-spined species, with limbs noticeably longer than those of the European hedgehog.

Among mammals, the most common are the ton-footed ground squirrel, jerboa, wolf, wild boar, fox and hare; among birds - saksaul jay, desert sparrow, magpie; among reptiles - lizards, sand boa, among fish - grass carp, Amu Darya trout, carp, pike perch, snakehead, common silver carp, etc. Among invertebrate species, phalanges, scorpions, sand tarantula, and beetles are common.

Thus, the flora and fauna of the Republic of Karakalpakstan is diverse, but in the last decade the species composition of many animals has undergone changes and, due to a decrease in numbers, are included in the Red Book of the IUCN and the Republic of Uzbekistan.

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